

COUNTRY ANALYSIS BRIEFS

United Arab Emirates

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Background

The United Arab Emirates has had strong economic growth due to historically high oil prices.

The overall performance of the UAE's economy is heavily dependent on oil exports, which account for over 30 percent of total gross domestic product (GDP). Growth in real GDP was 7.2 percent in 2005, partially due to higher crude oil prices. For 2006, real GDP growth is forecast to slow to 5.1 percent. The non-oil segment of the UAE's economy also is experiencing strong growth, particularly the petrochemicals and financial services sectors.



The UAE is a federation of seven emirates - Abu Dhabi, Dubai, Sharjah, Ajman, Fujairah, Ras al-Khaimah, and Umm al-Qaiwain. Political power is concentrated in Abu Dhabi, which controls the vast majority of the UAE's economic and resource wealth. The two largest emirates -- Abu Dhabi and Dubai -- provide over 80 percent of the UAE's income. In June 1996, the UAE's Federal National Council approved a permanent constitution for the country. This replaced a provisional document which had been renewed every five years since the country's creation in 1971. The establishment of Abu Dhabi as the UAE's permanent capital was one of the new framework's main provisions. The current head of state, Sheikh Mohamed bin Rashid Al Maktoum, took office in January 2006, following the death of his brother Sheikh Maktoum bin Rashid al-Maktoum.

In recent years, the UAE has undertaken several projects to diversify its economy and to reduce its dependence on oil and natural gas revenues. The non-oil sectors of the UAE's economy presently contribute around 70 percent of the UAE's total GDP, and about 30 percent of its total exports. The federal government has invested heavily in sectors such as aluminum production, tourism, aviation, re-export commerce, and telecommunications. As part of its strategy to further expand its tourism industry, the UAE is building new hotels, restaurants and shopping centers, and expanding airports and duty-free zones. Dubai has become a central Middle East hub for trade and finance, accounting for about 85 percent of the Emirates' re-export trade. The UAE has been a member of the World Trade Organization (WTO) since 1995, and has one of the most open economies in the region. It began negotiations in March 2005 with the United States on a possible free trade agreement.

The UAE and Iran continue to dispute the ownership of three islands, Abu Musa and the Greater and Lesser Tunb Islands, which are strategically located in the Strait of Hormuz. All three islands

were effectively occupied by Iranian troops in 1992. The Mubarak field, which is located six miles off Abu Musa, has been producing oil and associated natural gas since 1974. In 1995, the Iranian Foreign Ministry claimed that the islands are "an inseparable part of Iran." Iran rejected a 1996 proposal by the Gulf Cooperation Council (GCC) for the dispute to be resolved by the International Court of Justice, an option supported by the UAE. In early 1996, Iran took further moves to strengthen its hold on the disputed islands. These actions included starting up a power plant on Greater Tunb, opening an airport on Abu Musa, and announcing plans for construction of a new port on Abu Musa. In the dispute, the UAE has received strong support from the GCC, the United Nations, and the United States. Although Iran remains a continuing concern for officials in Abu Dhabi, they have chosen not to escalate the territorial dispute. Iran is one of Dubai's major trading partners, accounting for 20 percent to 30 percent of Dubai's business.

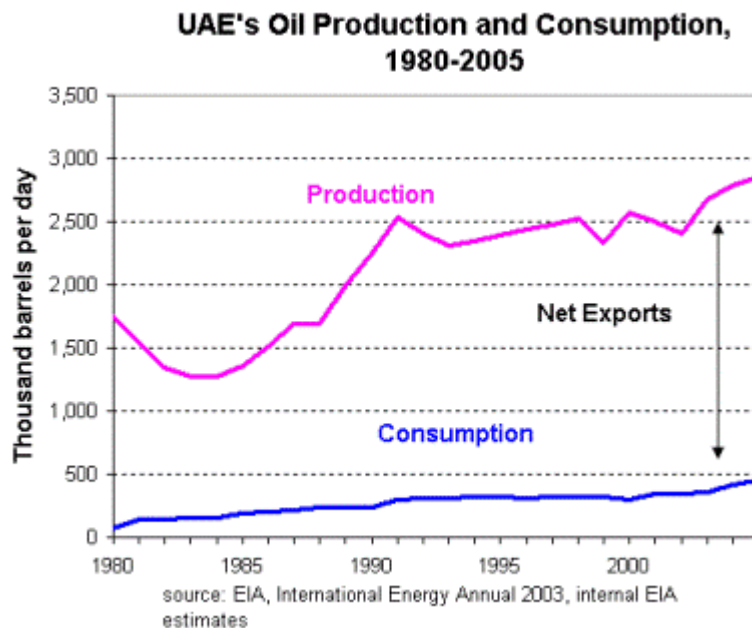
Oil

The United Arab Emirates has several projects underway to make modest expansions to oil production capacity.

According to Oil and Gas Journal (1/1/06), the UAE contains proven crude oil reserves of 97.8 billion barrels, or slightly less than 8 percent of the world total. Abu Dhabi holds 94 percent of this amount, or about 92.2 billion barrels. Dubai contains an estimated 4.0 billion barrels, followed by Sharjah and Ras al-Khaimah, with 1.5 billion and 100 million barrels of oil, respectively.

The majority of the UAE's crude oil is considered light, with gravities in the 32^o to 44^o API range.

Abu Dhabi's Murban 39^o and Dubai's Fateh 32^o blends are the UAE's primary export crude streams, though Dubai's production is been falling in recent years due to the decline of its modest reserves. Most of the UAE's oil fields have been producing since the 1960s or early 1970s. Proven oil reserves in Abu Dhabi have roughly doubled in the last decade, mainly due to significant increases in rates of recovery. Abu Dhabi has continued to identify new finds, especially offshore, and to discover new oil-rich structures in existing fields.



Under the UAE's constitution, each emirate controls its own oil production and resource development. Although Abu Dhabi joined OPEC in 1967 (four years before the UAE was formed), Dubai does not consider itself part of OPEC or bound by its quotas.

The UAE's current [OPEC production quota](#) (effective July 1, 2005) is 2.44 million barrels per day (bbl/d), and its current crude oil production as of May 2006 is 2.50 million bbl/d. The UAE's total production capacity is 2.50 million bbl/d, so it does not have any spare capacity at the current level of production.

The Abu Dhabi National Oil Company (ADNOC) selected ExxonMobil in April 2005 as a strategic partner in the development of the Upper Zakum field, with a 28 percent ownership stake, after a

competitive bidding process. A binding contract between ExxonMobil and ADNOC was finalized in March 2006. ExxonMobil is set to undertake a program of upgrades to the Upper Zakum field to raise its capacity from the current 550,000 bbl/d to 750,000 bbl/d, and introduce enhanced recovery technologies to extend the productive life of the field. The Japan Oil Development Company (JODCO) already holds a 12 percent stake in the field from a previous investment in 1972, when the field was first developed.

Several projects to upgrade infrastructure at existing oilfields are planned or underway. A project to increase the capacity of the onshore Bu Hasa field is underway, including construction of natural gas separation units, drilling of natural gas reinjection wells, and water injection. The goal is to increase sustainable production capacity to 730,000 bbl/d from the present 550,000 bbl/d by the end of 2006. A natural gas reinjection project also is planned for the onshore Bab field, which is expected to increase capacity to 300,000 bbl/d from the current 200,000 bbl/d. Bids for management of the project were received in May 2006. Upgrades planned for the onshore Sahib, Asab, and Shah (SAS) fields are set to raise capacity from the current 385,000 bbl/d to 465,000 bbl/d. Bids for the project were received in March 2006. Three small fields, al-Dabb-iyah, Rumaitha, and Shanayel, have been brought onstream over the past year, offsetting production declines at more mature fields.

The UAE has two refineries operated by ADNOC. The Ruwais refinery produces light products mainly for export to Japan and elsewhere in Asia. Fuel oil from Ruwais is sold as bunkers by ADNOC and also used for domestic electric power generation. The Italian engineering firm Technip completed a \$480 million expansion of the Ruwais complex to a capacity of 420,000 bbl/d in January 2006, including refits of existing units and expansion of units for production of unleaded gasoline and low-sulfur fuel oil. Umm al-Nar, also owned by ADNOC, has a capacity of 88,000 bbl/d. Since its construction in 1976, the Umm al-Nar plant has undergone debottlenecking as well as a recent expansion.

UAE has three other refineries. The Emirates National Oil Company (ENOC) Jebel Ali condensate refinery, with a capacity of 120,000 bbl/d, began operations in Dubai in May 1999. Metro Oil has a 90,000-bbl/d refinery in Fujairah. A 71,250-bbl/d, second-hand unit was set up by the Sharjah Oil Refining Company in 2001. Also, a feasibility study on a possible new refinery in Fujairah is being undertaken.

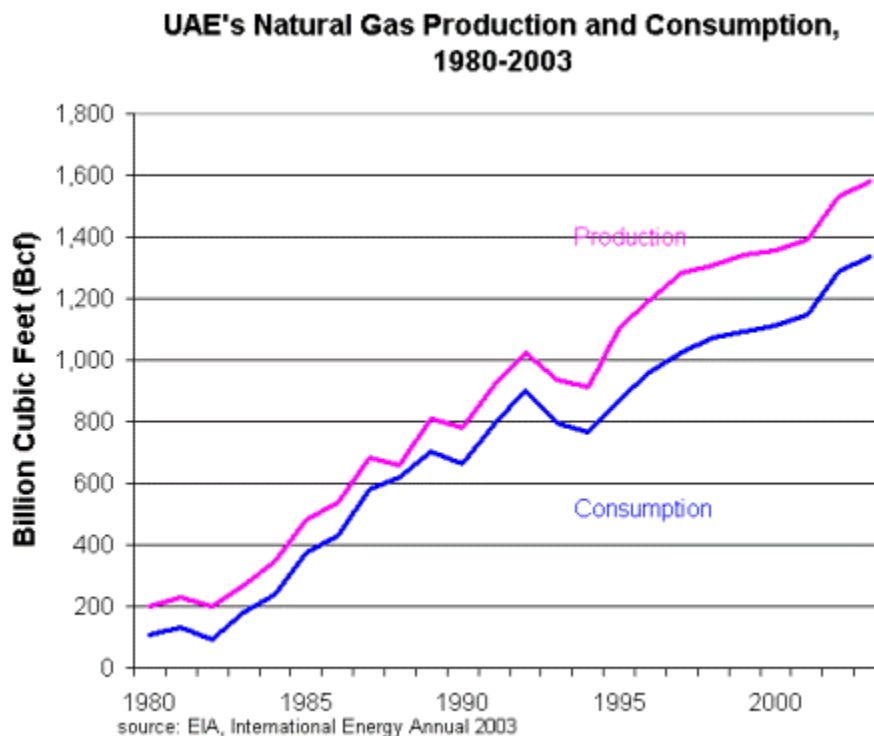
In October 1998, the International Petroleum Investment Company (IPIC), the UAE's downstream investment outfit, purchased 50 percent of the Hyundai Oil Refinery Company of South Korea for \$500 million. The UAE is the second-largest crude oil supplier to South Korea after Saudi Arabia. IPIC's overseas holdings also include a 10 percent stake in Spain's CEPSA and a 19.6 percent share of Austria's OMV.

Natural Gas

Imports of natural gas from Qatar via the Dolphin Project pipeline are set to begin in early 2007.

According to *Oil and Gas Journal* (1/1/06), the UAE's natural gas reserves of 214.4 trillion cubic feet (Tcf) are the world's fifth largest after Russia, Iran, Qatar, and Saudi Arabia. The largest reserves of 198.5 Tcf are located in Abu Dhabi. Sharjah, Dubai, and Ras al-Khaimah contain smaller reserves of 10.7 Tcf, 4.0 Tcf, and 1.2 Tcf, respectively. In Abu Dhabi, the non-associated Khuff natural gas reservoirs beneath the Umm Shaif and Abu al-Bukhush oil fields rank among the world's largest.

Increased domestic consumption of electricity and growing demand from the petrochemical industry has provided incentives for the UAE to increase its use of natural gas. Over the last decade, natural gas consumption in Abu Dhabi has doubled, and it currently stands at around 4 billion cubic feet per day (bcf/d). The development of natural gas fields also results in increased production and exports of condensates, which are not subject to OPEC production quotas.



The past few years have seen the UAE embark on a massive, multi-billion dollar program of investment in its natural gas sector including a shift toward natural gas-fired power plants and the transformation of the Taweelah commercial district into a natural gas-based industrial zone. An ambitious plan, the Dolphin Project, to interconnect the natural gas grids of Qatar, the UAE, and Oman, also is underway. Most of the UAE's increased natural gas needs in the next decade are to be satisfied with imported natural gas from Qatar. Much of the natural gas development in the UAE itself involves the extraction of natural gas liquids (NGLs) and reinjection of the gas to maintain pressure in oilfields.

The second phase of the UAE's \$1 billion onshore natural gas development program (OGD-2) at the Habshan complex located directly over the Bab oil and natural gas field was completed in early 2001. This second phase included the construction of four trains to process 1 bcf/d of natural gas, 300-500 tons per day (t/d) of natural gas liquids (NGLs), 35,000-55,000 t/d of condensate and up to 2,100 t/d of sulphur. Additional capacity expansion is underway in the third phase, OGD-3, and will involve the construction of two additional natural gas processing plants. Bechtel was awarded the initial engineering and design work for OGD-3 in May 2002, which was completed in 2003. The U.S.-based engineering firm Foster Wheeler was awarded a project management contract for OGD-3 in January 2005, and several other contracts have been awarded since then for various aspects of construction. OGD-3 is scheduled for completion in early 2008.

Dubai's natural gas consumption has been growing by nearly 10 percent annually due to expansion of the emirate's industrial sector, a switch to natural gas by its power plants, and the need for an enhanced oil recovery (EOR) system based on natural gas injections for its mature oilfields. Dubai natural gas demand will average 810 Mmcfd in 2005, with major swings between summer and winter consumption patterns. Until mid-2001, Dubai's entire natural gas supply came entirely from fellow UAE member Sharjah. BP operates three fields and the 800-Mmcfd Sajaa processing facility in conjunction with the Sharjah government. In May 2001, a pipeline from the Maqta area of Abu Dhabi to Dubai commenced operations, initially delivering 200 Mmcfd of natural gas. The capacity of the pipeline was raised to 800 Mmcfd in a project completed in 2004.

The Dolphin Project aims to develop links between the natural gas infrastructures of Qatar, the UAE, and Oman. It will allow the export of non-associated natural gas from Qatar's massive

offshore North Dome field. A Statement of Principles for the project was signed in March 1999 between the UAE Offsets Group (UOG) and Qatar Petroleum. The two firms signed a natural gas sales agreement in March 2001, with natural gas supplies expected to start in late 2006. Estimated to cost \$8-\$10 billion over the next decade, the project will begin as a subsea pipeline from Ras Laffan in Qatar to a landfall in Abu Dhabi, which will then be extended to Dubai and northern Oman. It will start at 48 inches in diameter, narrowing to 30 inches by the time it reaches Oman. In its initial phase, the pipeline is to carry 3 Bcf/d of Qatari natural gas to the UAE and Oman, accounting for nearly 10 percent of total world natural gas supplies shipped by pipeline.

In October 1999, UOG and ADNOC issued a joint declaration dividing up natural gas distribution between them. Natural gas from the Dolphin Project will be the exclusive supply for natural gas-fired power plants, except in the Western Region of Abu Dhabi, and will also supply natural gas for ADNOC contracts with Dubai. Natural gas from the Dolphin Project will use the ADNOC distribution network until the project develops its own network. In March 2000, UOG signed a contract with two foreign firms, TotalFinaElf and Enron, after securing purchase agreements with Abu Dhabi, Dubai, and Oman. In May 2001, however, Enron announced that it was backing out of the project, and selling its 24.5 percent stake back to UOG. UOG sold this share to Occidental Petroleum in June 2002 after receiving bids from several foreign companies. Upstream development in Qatar began in 2003, financing for the subsea pipeline was concluded in late 2004, and initial deliveries of natural gas to the UAE are expected to begin in the first quarter of 2007. After several years of delays, Dubai signed a binding natural gas sales contract with Dolphin Energy in May 2005.

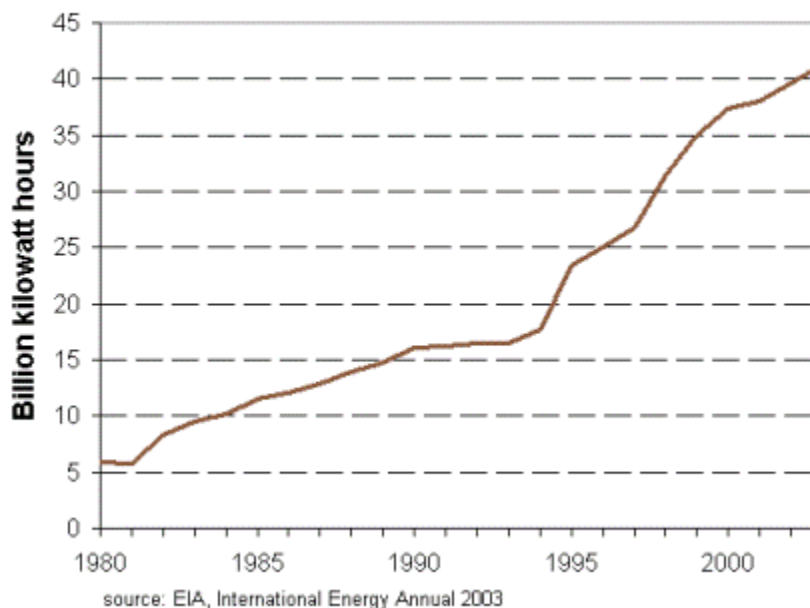
Oman already has a natural gas pipeline to Fujairah in the UAE, and until supplies from Qatar become available, Fujairah is importing natural gas from Oman, under a contract held by Dolphin Energy. Supplies of 135 Mmcf/d of Omani natural gas commenced in January 2004 -- the first natural gas transmission across national borders on the Arabian Peninsula. Eventually, Qatari natural gas will be supplied to Fujairah, and the direction of the pipeline will be reversed by 2008, allowing for Omani imports of Qatari natural gas.

Electricity

Electricity demand in the UAE is growing at a rapid pace.

The UAE's soaring demand for electric power, coupled with volatile swings in peak loads, led the Emirates in 1997 to form a Privatization Committee for the Water and Electricity Sector. In early 1998, the committee called for a comprehensive restructuring, including the elimination of the state-owned Abu Dhabi Water and Electricity Department (ADWED). ADWED was transformed into a regulatory body, the Abu Dhabi Water and Electricity Authority (ADWEA).

UAE's Electricity Generation, 1980-2003



TotalFinaElf and Tractebel were awarded a contract by ADWEA in August 2000 for an upgrade to the Taweelah A-1 plant, which gives a 20 percent ownership stake to each of the foreign partners, with the rest remaining with ADWEA. The upgrade was completed in May 2003, and the facility now has an installed capacity of 1,350 megawatts (MW).

Another step in the reorganization was the expansion of the Taweelah cogeneration facility. The expansion, known as Taweelah A-2, is the UAE's first independent water and power project (IWPP), and reached financial close in April 1999. It is the second independent power project in the Gulf after Oman's al-Manah facility. With a price tag of some \$800 million, the expansion added about 763 MW of power and 50 million gallons of desalinated water to the UAE's supplies. The first 370-MW came online in July 2000. The rest of the generating units became operational in August 2001. The Taweelah A-2 project is run by Emirates CMS Power, a joint venture between CMS Energy (40 percent ownership interest) and the newly-formed Emirates Power Company (EPC) (60 percent).

The al-Taweelah Power Company manages the Taweelah B facility. It currently has an installed capacity of 1,070 MW, and was purchased in July 2005 by the Taweelah Asia Power Company, a joint venture including Marubeni and BTU Power of the U.S., with 60% held by a subsidiary of ADWEA. The company is building an additional 1,045 MW plant on the same site, which is slated to become operational in 2008.

The Umm al-Nar Power Company operates the plant by the same name with an 850-MW, 162-million-g/d facility. ADWEA received bids in November 2002 for the partial privatization of the company, which will be structured similarly to the two Taweelah IWPPs. The sale of a 40 percent share was awarded to a consortium including Tokyo Electric Power (TEPCO), Mitsui, and International Power of the UK in April 2003. It reached financial close in June 2003. The consortium will be undertaking a 1,550-MW capacity expansion at the site, to be completed in mid-2006. In mid-2008, the old 850-MW generation unit will be handed back over to ADWEA for decommissioning.

The Abu Dhabi Water and Electricity Authority (ADWEA) signed a contract for the Shuweihat IWPP project in August 2001 with a consortium of CMS Energy and International Power PLC. The \$1.6 billion deal provides for the construction and operation of a 1,500-MW combined cycle plant with a desalination capacity of 100 million gallons per day. Construction began in early 2002, and commercial operation began in August 2004.

Dubai has a separate entity which handles its electricity, the Dubai Electricity and Water Authority (DEWA). DEWA, unlike ADWEA, owns and operates its own generating plants. DEWA issued a tender in March 2006 for the construction of a 2,000 MW power plant and desalination facility, Jebel Ali M, with bids due in June 2006.

The UAE also is taking part in a \$1 billion plan to build a regional power grid throughout the countries of the Gulf Cooperation Council (GCC). The first phase of the plan would link Saudi Arabia, Kuwait, Bahrain and Qatar; the UAE and Oman would join the grid in the second phase of the plan. GCC electricity ministers signed a final agreement on the project in June 1999. The plan is based on the assumption that each country will have its own unified power grid, and the UAE is doing its part by connecting all the power stations along its western coast with the central region. A contract for implementation of the grid interconnections was awarded to Electricite de France (EdF) in early 2003.

Profile

Country Overview

Head of State	Sheikh Khalifa bin Zayed al-Nuhayyan
Location	Middle East, bordering the Gulf of Oman and the Persian Gulf, between Oman and Saudi Arabia
Independence	2 December 1971 (from UK)
Population (2005E)	2,563,212 note: includes an estimated 1,606,079 non-nationals; the 17 December 1995 census presents a total population figure of 2,377,453, and there are estimates of 3.44 million for 2002
Languages	Arabic (official), Persian, English, Hindi, Urdu

Religion	Muslim 96% (Shi'a 16%), Christian, Hindu, and other 4%
Ethnic Group(s)	Emirati 19%, other Arab and Iranian 23%, South Asian 50%, other expatriates (includes Westerners and East Asians) 8% (1982) note: less than 20% are UAE citizens (1982)

Economic Overview

Currency/Exchange Rate (5/11/2006)	1 U.S. Dollar = 3.67 UAE Dirhams
Inflation Rate (2005E)	10.5%
Gross Domestic Product (2005E)	\$122.2 billion
Real GDP Growth Rate (2005E)	7.2%
Exports (2005E)	\$105.5 billion
Exports - Commodities	crude oil 45%, natural gas, reexports, dried fish, dates
Exports - Partners (2004E)	Japan 28.5%, South Korea 9.5%, Thailand 5.9%
Imports (2005E)	\$76.0 billion
Imports - Commodities	machinery and transport equipment, chemicals, food
Imports - Partners (2004E)	China 10.4%, India 8.3%, Japan 7.2%, Germany 6.6%, France 6.4%, UK 6.2%, US 6%, Italy 4.1%

Energy Overview

Minister of Petroleum	Muhammad bin Dhain Al-Hamili
Proven Oil Reserves (January 1, 2006E)	97.8 billion barrels
Oil Production (2005E)	2,852.2 thousand barrels per day, of which 85% was crude oil.
Oil Consumption (2005E)	418.7 thousand barrels per day
Crude Oil Distillation Capacity (2006E)	781.3 thousand barrels per day
Proven Natural Gas Reserves (January 1, 2006E)	214.4 trillion cubic feet
Natural Gas Production (2003E)	1.6 trillion cubic feet
Natural Gas Consumption (2003E)	1,337.7 billion cubic feet
Recoverable Coal Reserves (2003E)	None
Coal Production (2003E)	None
Coal Consumption (2003E)	None
Electricity Installed Capacity (2003E)	5.9 gigawatts
Electricity Production (2003E)	41.2 billion kilowatt hours
Electricity Consumption (2003E)	38.3 billion kilowatt hours
Total Energy Consumption (2003E)	2.2 quadrillion Btus*, of which Natural Gas (62%), Oil (35%), Coal (0%), Nuclear (0%), Hydroelectricity (0%), Other Renewables (0%)
Total Per Capita Energy Consumption (2003E)	725 million Btus
Energy Intensity (2003E)	29,025.6 Btu per \$2000-PPP**

Environmental Overview

Energy-Related Carbon Dioxide Emissions (2003E)	131.9 million metric tons, of which Natural Gas (57%), Oil (43%), Coal (0%)
Per-Capita, Energy-Related	44.1 metric tons

Carbon Dioxide Emissions (2003E)

**Carbon Dioxide Intensity
(2003E)** 1.8 Metric tons per thousand \$2000-PPP**

Environmental Issues lack of natural freshwater resources compensated by desalination plants; desertification; beach pollution from oil spills

Major Environmental Agreements party to: Biodiversity, Climate Change, Climate Change-Kyoto Protocol, Desertification, Endangered Species, Hazardous Wastes, Marine Dumping, Ozone Layer Protection signed, but not ratified: Law of the Sea

Oil and Gas Industry

Organization Abu Dhabi National Oil Company (ADNOC); Operates three main oil and natural gas operating companies, five Service companies, three joint ventures to fully utilize the produced natural gas, two maritime transport companies for crude oil, refined product and LNG and one refined product distribution company

Ports Abu Dhabi: Das Island, Delma Island, Jebel as Dhanna, Ruwais, Abu al Bukhush, Al Mubarraz, Zirku Island, Port Zayed, Umm al Nar Dubai: Jebel Ali, Fateh, Port Rashid Sharjah: Mubarak

Major Oil Fields Abu Dhabi: 'Asab, Bab, Bu Hasa, Al-Zakum Dubai: Fallah, Fateh, Southwest Fateh, Margham, Rashid Sharjah: Mubarak (near Abu Musa Island)

**Major Natural Gas Fields
(production, Bcf/d)** Abu Dhabi: Abu al-Bukhush, Bab, Bu Hasa, Umm Shaif, Zakum

Major Refineries Ruwais (145,000 bbl/d), Emirates National Oil Company (ENOC) - Dubai (120,000), Umm al-Nar (88,000 bbl/d), Metro Oil (Fujairah)(90,000 bbl/d), Sharjah Oil Refining Company (71,250)

* The total energy consumption statistic includes petroleum, dry natural gas, coal, net hydro, nuclear, geothermal, solar, wind, wood and waste electric power. The renewable energy consumption statistic is based on International Energy Agency (IEA) data and includes hydropower, solar, wind, tide, geothermal, solid biomass and animal products, biomass gas and liquids, industrial and municipal wastes. Sectoral shares of energy consumption and carbon emissions are also based on IEA data.

**GDP figures from OECD estimates based on purchasing power parity (PPP) exchange rates.

Links

EIA Links

[EIA - Country Information on the United Arab Emirates](#)

U.S. Government

[CIA World Factbook - United Arab Emirates](#)

[U.S. State Department Country Commercial Guide - United Arab Emirates \(requires Adobe Acrobat Reader\)](#)

[U.S. State Department Report on Economic Policy and Trade Practices - United Arab Emirates](#)

[U.S. State Department Consular Information Sheet - United Arab Emirates](#)

[U.S. Department of Energy - Office of Fossil Energy - International section - United Arab Emirates](#)

General Information

[Abu Dhabi National Oil Company \(ADNOC\)](#)

[Abu Dhabi Water and Electricity Authority \(ADWEA\)](#)

[Dolphin Energy](#)

[UAE Goes Green](#)

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[MENA Petroleum Bulletin](#)

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Sources

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Middle East Economic Digest
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World Gas Intelligence

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